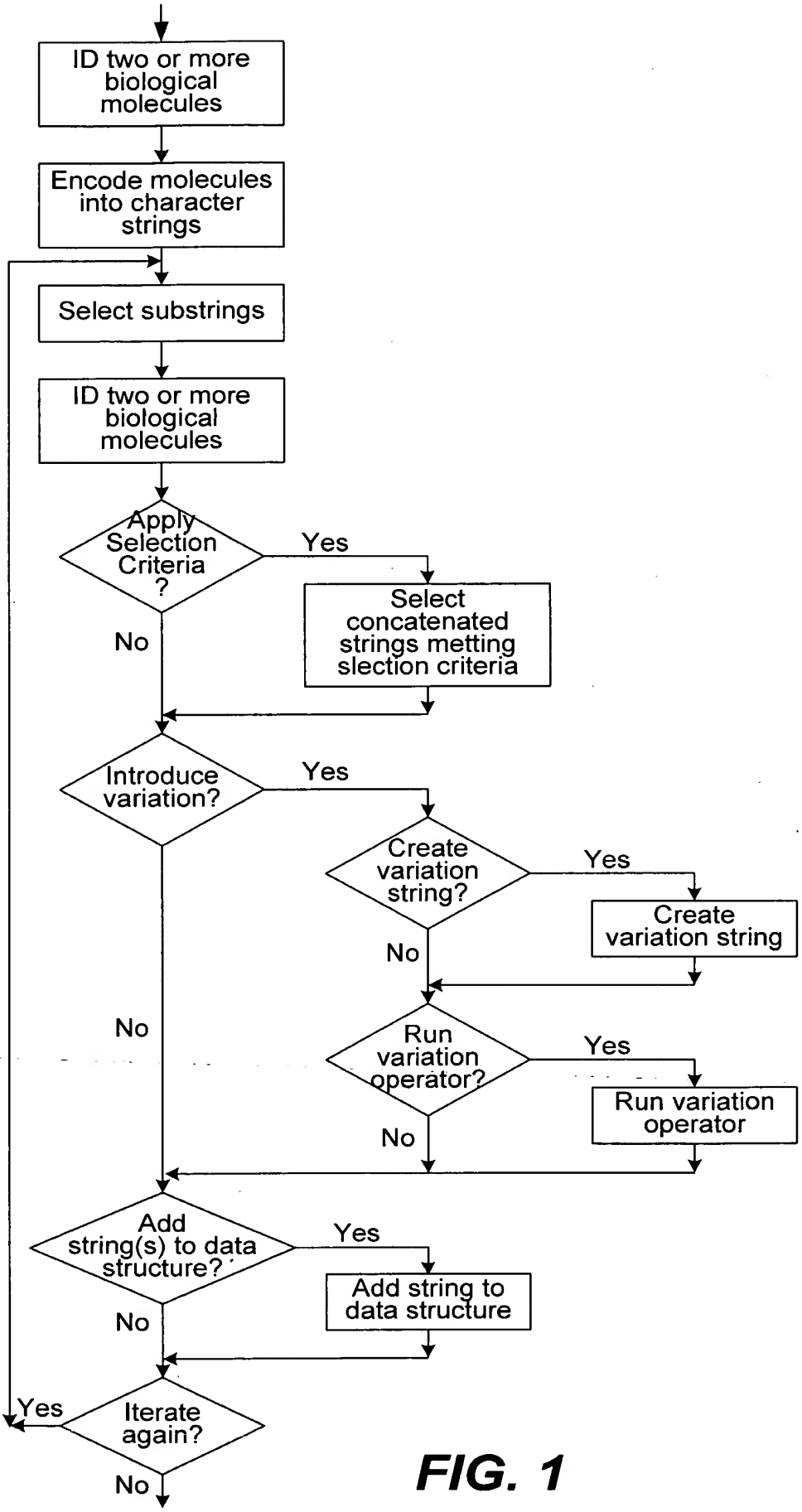

FIG. 1

Initial strings A, B, and C:

String A: A1 - A2 - A3 - A4 - A5
String B: B1 - B2 - B3 - B4 - B5
String C: C1 - C2 - C3 - C4 - C5

↓ Select substrings

String Pools:

Pool 1: A1, B1, C1
Pool 2: A2, B2, C2
Pool 3: A3, B3, C3

↓ Concatenate substrings

New Strings:

String A: A1 - A2 - A3 - A4 - A5
String B: B1 - B2 - B3 - B4 - B5
String C: C1 - C2 - C3 - C4 - C5

FIG. 2

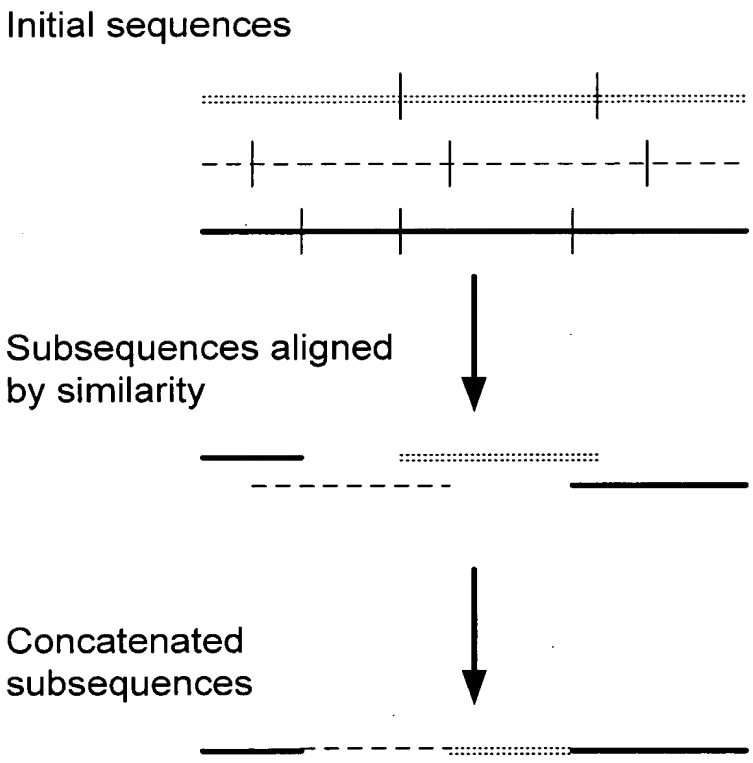

FIG. 3

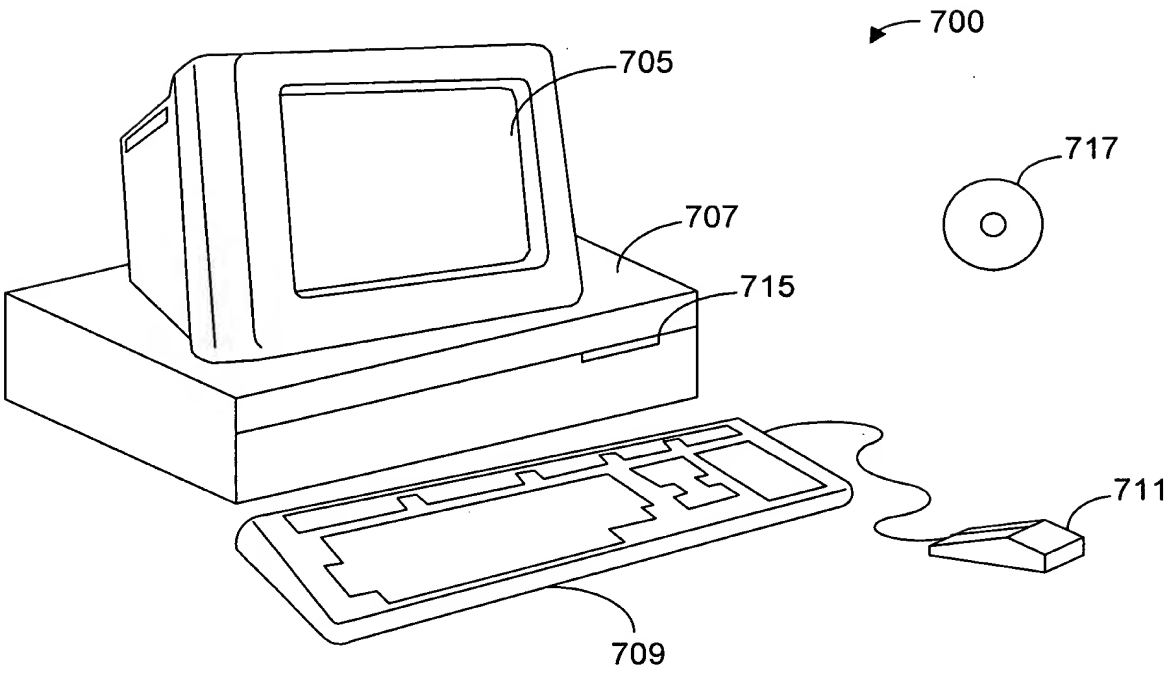

FIG. 4

FAMILY GAGGS MODEL # 1.

SUBTILISIN BACKGROUND INFORMATION:

7 PARENTS, SERINE PROTEASES, DIVERSE

TYPE OF ALIGHMENT/SIMILARITY DATA PRESENTED:
AMINOACID SEQUENCES, LEADER PEPTIDE EXCLUDED.

Percent Similarity

	1	2	3	4	5	6	7		
1		62.1	81.4	57.6	81.8	56.1	59.1	1	A27211 synthetic 309.PM
2	50.5		61.0	54.9	59.5	58.2	60.8	2	BACAPRQ subtilisin.PM
3	21.0	52.0		54.6	78.4	50.6	53.2	3	BACAPRS subtilisin.PM
4	54.4	63.3	62.3		52.0	64.6	67.9	4	BACSBTL subtilisin.PM
5	20.5	54.9	25.1	65.6		53.9	56.5	5	BACYAB subtilisin alk.PM
6	58.6	56.6	72.2	44.2	63.4		94.9	6	BLSC11594 subtilisin.PM
7	52.5	51.4	66.0	38.5	57.8	4.9		7	I82494 keratinase.PM
	1	2	3	4	5	6	7		

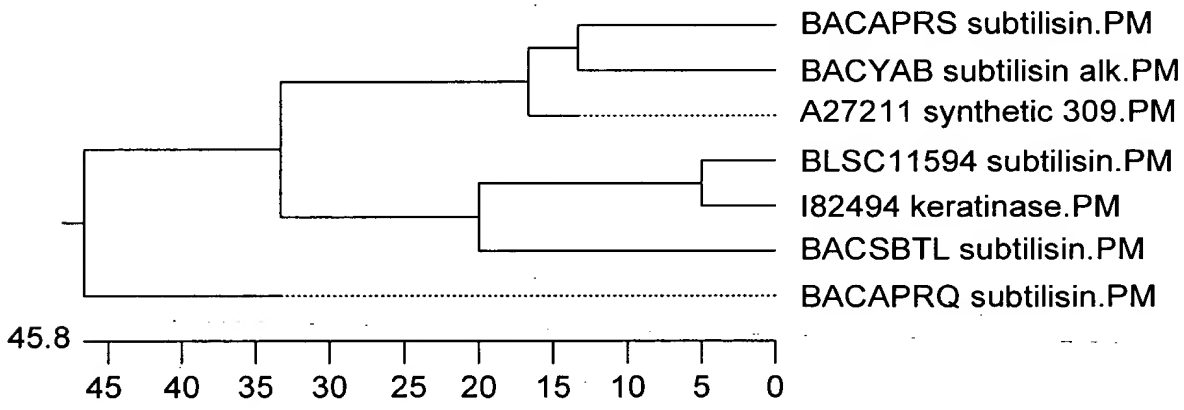

FIG. 5

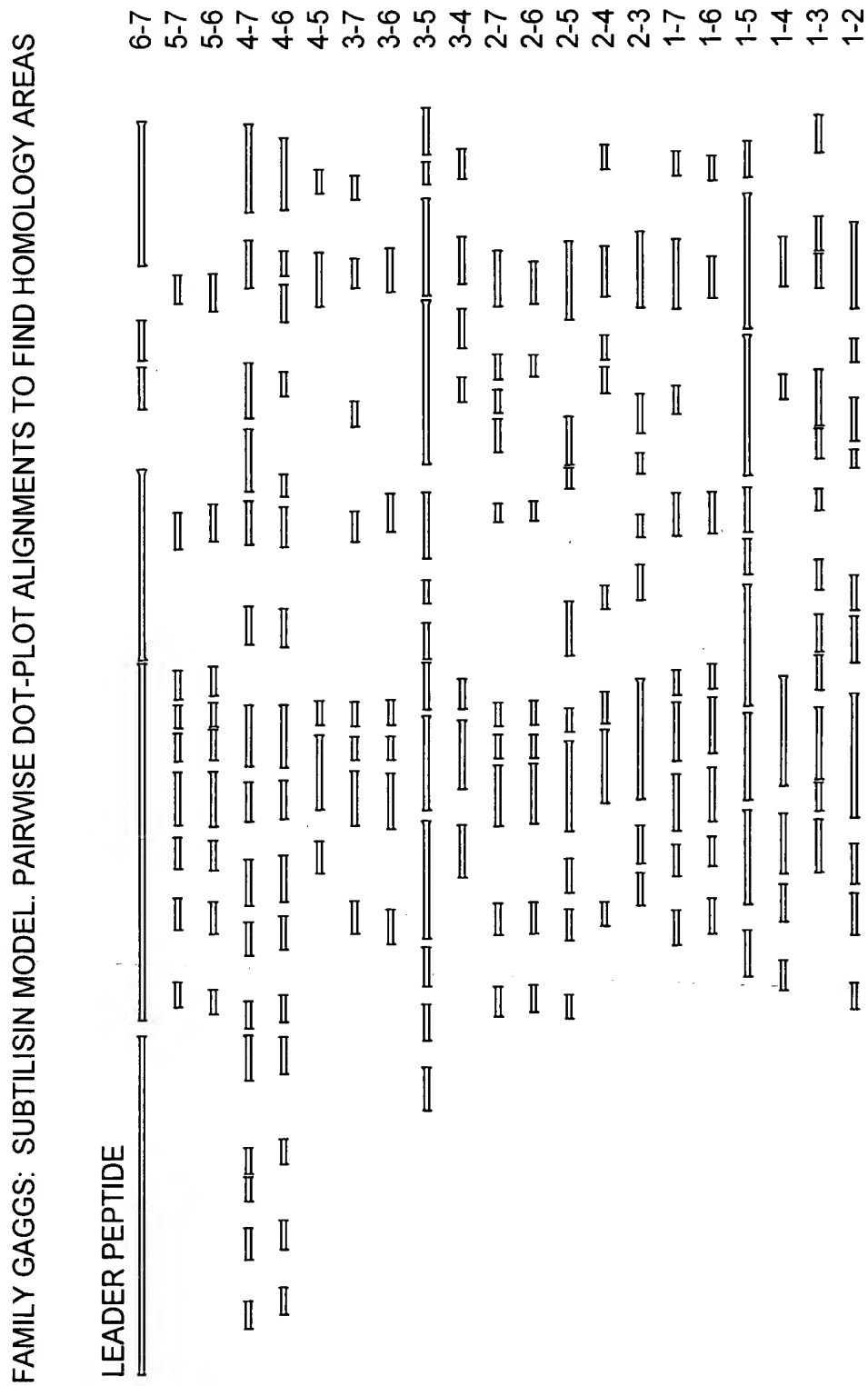

FIG. 6

App No: 09/495,668 Filed: 02/01/00
Examiner: Kim J. Young
Art Unit: 1631 Atty Dkt: MXGNP002X1
Sheet 7 of 7

GAGGS - SUBTILISIN MODEL (7 PARENTS) SELECTING PAIRWISE CROSSOVER POINTS

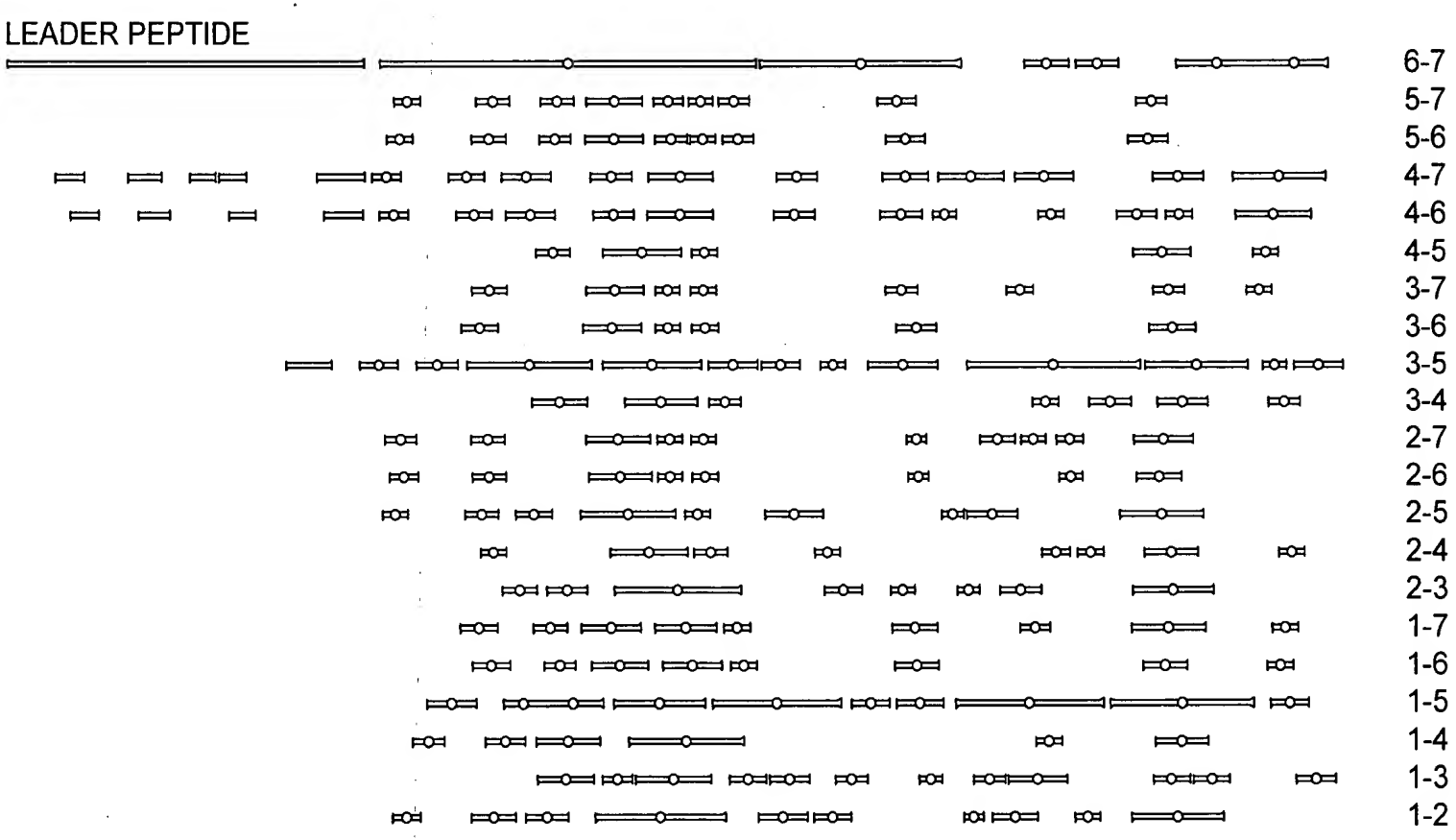

FIG. 7